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CLIFFORD A POFF
P O BOX 1185
PITTSBURGH PA 15230-1185

EXAMINER	
HOLLOWAY III,E	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 37

Application Number: 08/421,810
Filing Date: April 13, 1995
Appellant(s): CONRAD ET AL.

Clifford A Poff
For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed 2-8-1.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement that there are no related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that the claims do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8). Apellants grouping of claims is listed on page 7 of the brief.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

4990892	GUEST	5-1999
5363425	MUFTI	11-1994

3403381	HANER	9-1968
5206637	WARREN	4-1993

"Understanding Data Communication," Radio Shack, pp 5-2 and 5-12 to 5-15, copyright 1984

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

CLAIMS

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 72-77, 79-80, 82-87, 89-90, 92-97, 99-100 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding independent claim 72, 82 and 92, the individual stationary receiver units each comprising in combination infrared receiving means and programmable processor means remotely separate from said central processing means such that each said receiver unit has the capability to store multiple unique identity data streams received from multiple said transmitter units are not supported by applicant's specification. Applicant's store is in microcontroller 222 of the arbiter rather than the microcontroller 158 of the receiver. Therefore, applicant lacks individual receiver units

each having infrared receiving means and processor means for storage. Further, microcontroller 222 is disclosed as storing a received unique identity which is removed when the code stops reporting for more than 10 seconds. Only one code is described by applicant, not the claimed multiple unique identity data streams received from multiple said transmitter units. Applicant's microcontroller 222 stores nurse level information with a list of ID codes, but this is sent from the central computer 2, not the receiver unit. Therefore applicant lacks storage of multiple unique codes from multiple transmitters. Further, the claim are written in means plus function language including receiver units each comprising infrared receiver means and programmable processor means which is interpreted under 35 USC 112 paragraph 6 as the infrared receiver and processor as disclosed in Fredrickson and cannot be supported by applicant's disclosure requiring elements that are not even part of the receiver unit. It is noted that applicant's preamp board 106 with photodiode 118 is mounted in a single gang face place with the logic board 108 including microcontroller 158. This is considered a receiver unit with a microprocessor but does not include the limitations of applicant's microprocessor 222 of arbitrator 6 which is not part of the receiver unit. Independent claim 82 requires individual receiver units each comprising a single receiving means and single microprocessor means such that the total number of said microprocessor means is equal to the total number of individual receiver units each receiver unit has the capability to store multiple unique identity streams is not supported by applicant's specification. Applicant's specification requires first microprocessor 158 at the receiver and a second microprocessor 222 in the arbiter which is not in the receiver unit and

does not result in the same number of receiver units and microprocessors. Applicant's specification does not particularly point out a single arbiter for each receiver, and if such was provided, specification would only support storage of a single unique code in the table for the single receiver which is removed when reception stops. Claim 92 includes a paired single infrared receiving means and single microprocessor means which is not supported for the same reason applied to claim 82.

Dependent claims 73, 83 and 93 include a stream "consisting of" 16 data bits framed by a pair of start bits and stop bit which is not supported because applicant includes only a single start bit in fig. 4, 20 data bits instead of 16, and a 6 bit checksum which corresponds to parity for validity checking rather than a single stop bit for framing. Note that these claims use the closed "consisting of" rather than the open "comprising" language. Further, applicant's specification only describes storing one of these codes for each receiver rather than multiple streams as in the independent claims.

Dependent claims 75,85 and 95 include transmit units transmit both vertically and horizontally which is not supported by LED's 84A and 84B because it is not stated that these transmit vertically and horizontally.

Dependent claims 77, 87 and 97 include said receiver unit microprocessor means test received data for validity. Applicant discloses microcontroller 158 checking validity, but relies on microcontroller 222 for storage which is not the same said microprocessor means. Further, description in the specification directed to validating only specifies validating one code which corresponding to validating one stream and still lacks support for storing multiple codes corresponding to multiple streams.

Dependent claims 79, 89, 99 include "each" transmitter unit repeatedly transmits a pattern "consisting of" three transmission with different time intervals between each of the three. This is not supported by applicants fig. 3 which does is not limited to "three" transmissions by "each" transmitter.

ART REJECTION

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 49-50, 53-55, 57-65, 67, and 69-70 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 4,990,892 (Guest) in combination with US Patent No. 5,363,425 (Mufti) and US Patent No. 3,403,381 (Haner).

Guest discloses a personnel locating system with transmitters sending bursts to receivers at distinct burst periods to prevent synchronization. Each transmitter uses a different or divers period. The transmitters can be carried by people in order to locate them which is all that is required by the claiming of person, animal, or equipment in an alternative manner. Each transmitter uses a different or divers period. The transmitters can be carried by people in order to locate them which is all that is required by the claiming of person, animal, or equipment in an alternative manner. Each transmitter in Guest sends at specified periods rather than the varying intervals of claim 49. Guest does not specify using an algorithm.

Mufti discloses an analogous art identification system which includes transmitters having microcontrollers which are provided with software or algorithms to provide the transmitter functions.

Haner discloses a system directed to preventing interferences between transmitters similar to Guest, but uses randomly varying repetition times rather than fixed times.

Regarding claims 49 and 65, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the functions of the Guest transmitter in response to an algorithm or software as described by Mufti since a software programmable device is easier and cheaper to mass produce and provides flexibility because the software can be modified to provide different functions. Alternatively, The transmitter in Mufti could have been modified to send infrared bursts as described by Guest which have advantages over RF transmission such as not requiring FCC licensing. It further would have been obvious to have included randomly specifying the transmission intervals as described by Haner which is advantageous for reducing interference when the number of transmitters is so large that they cannot each be assigned to a separate transmission interval. It would have been obvious to have specified the random period by an algorithm since the random pulses generator of Haner outputs a pulse at random times which is a representation of a random number provided by a randomizing algorithm and further because Mufti suggest using software or algorithms to provide all the transmitter operating functions (col. 7, lines 4-9) and Mufti describes random intervals for the burst transmission in col. 8, lines 1-3.

Regarding claim 50, Mufti discloses a microcontroller (61) responding to software or algorithms as discussed above.

Regarding claim 53, Guest discloses a unique sixteen bit binary codeword in col. 2, line 20, and it would have been an obvious design choice to extend this to any number of binary bits, such as 20 bits, in order to allow additional unique IDs for additional transmitter units up to 2 raised to the 20th power = 1048576 units.

Regarding claim 54, the 20 millisecond burst is an obvious design choice which is suggested by the 55 millisecond burst period of Guest (cols. 8-9) which is at least of the same magnitude.

Regarding claim 55, the random intervals of Haner is between .5 and 1.5 seconds which would amount to an average interval of about one second.

Regarding claim 57, Guest includes a transmission of two infrared pulses of 5 microsecond duration for a total transmission (high level) of 10 microseconds in col. 9, lines 50-52) which at least suggest a 10 microsecond flash.

Regarding claim 58, a plurality of receivers with allowable reception range overlap is described in col. 5, lines 1-26 of Guest, and Mufti includes validation aided by a CRC as discussed above.

Regarding claims 59-60, Guest includes an up to date registry and detecting presence and continued present in col. 3, lines 9-24 which corresponds to validating IDs and forming start and stop events when detected and lost.

Regarding claim 61, Guest includes connections between the central computer (44) and the gathering means (34) and it would have been obvious for these to include a plurality of serial ports since such is commonplace in the computer art.

Regarding claim 62, a terminal and keyboard for accessing data are commonplace in the art and are typically provided by a PC or workstation such as the workstation (18) of Mufti discussed in col. 5, lines 28-42 for accessing database (17).

Regarding claim 63, a display means for indicating reports stored at a central computer is commonplace in the computer art and is provided by the workstation of Mufti discussed above and/or the registry discussed in col. 3, lines 1-35 of Guest.

Regarding claim 64, Guest includes a hospital environment with communication to existing nurse stations as discussed in col. 3, lines 9-21 and col. 10, line 66 - col. 11, line 15.

Regarding claim 67, Mufti discloses a CRC error correction word discussed above.

Regarding claim 69, the CRC of Mufti is considered to be a binary checksum.

Regarding claim 70, the receiver of Mufti validates the CRC (col. 8, lines 59-60), and it is commonplace to validate the CRC by recalculating and comparing the CRC values.

4. Claims 49-65, 67 and 69-71 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 4,990,892 (Guest) in combination with US Patent No. 5,363,425 (Mufti) and US Patent No. 3,403,381 (Haner) as applied above to claims 1, 49-50, 53-55, 57-65, 67 and 69-70 and further in view of US Patent No. 5,206,637 (Warren).

Regarding claims 49-50, 53-55, 57-65, 67 and 69-70 if the algorithm limitation is interpreted to required a microcontroller with memory and microcode, then Warren suggests that such is obvious for the reasons stated below.

Regarding claim 51, Guest, Mufti, and Haner include unique ID's or addresses for the transmitters, and Mufti includes a microcontroller in the transmitter, but Mufti does not specify that the microcontroller includes a memory containing the unique address. Warren discloses an access system with a microcontroller connected to a memory for storing access codes. See col. 4, lines 46-54. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the ID stored in memory associated with the microcontroller as taught by Warren in the combination applied above since this would provide flexible (programmable) ID storage, and it further would have been obvious for this memory to be inside the microcontroller since making elements integral/separable and change in location of parts has been established to be obvious by case law.

Regarding claim 52, Mufti describes that the software instructions of the microcontroller provides for generations of a signal as shown in fig. 9 and col. 8 including a preamble (start bits), a binary ID code, and a CRC (checksum), but does not specify "microcode." Guest includes a unique 16 bit binary codeword with start bit and parity. Warren discloses microcode for providing the instructions of the microcontroller (col. 4, lines 46-50) Therefore it would have been obvious to have included the transmission instructions of Mufti in microcode which is suggested by Warren to be an equivalent terminology for the instructions of the microcontroller of Mufti.

Regarding claim 56, Mufti describes that the software instructions of the microcontroller in the receiver provides for validation of the received codes including the CRC shown in fig. 8 and col. 7. but does not specify "microcode." Warren discloses microcode for providing the instructions of the microcontroller (col. 4, lines 46-50) including comparing and validating access codes. Therefore it would have been obvious to have included the receiver instructions of Mufti in microcode which is suggested by Warren to be an equivalent terminology for the instructions of the microcontroller of Mufti.

Regarding claim 71, the receiver in fig. 8 of Mufti includes a microcontroller (82) which provides the validation and Warren teaches microcode as discussed above.

5. Claims 66 and 68 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 4,990,892 (Guest) in combination with US Patent No. 5,363,425 (Mufti) and US Patent No. 3,403,381 (Haner) and US Patent No. 5,206,637 (Warren) as applied above to claims 1, 49-65, 67 and 69 and further in view of the "Understanding Data Communications" book by Radio Shack.

The Radio Shack book describes using multiple bits per baud in order to increase the signaling rate on a channel with a limited bandwidth that causes a fixed maximum baud rate. This can be implemented by providing a dibit in which two bits a communicated by each modulated pulse or sine wave depending on the phase shift (position) of the wave as shown in table 5-4 or 5-6. Regarding claim 66, it would have been obvious to one of ordinary skill in the art at the time the invention was made to

have included a dibit in the combination applied above because the Radio Shack book states that this provides advantages such as an increased signaling rate.

Regarding claim 68, it further would have been obvious to have provided the dibit for the CRC for the same reasons discussed above.

(11) Response to Argument

Applicant's arguments filed 4-2-8-1 have been fully considered but they are not persuasive.

Claims 72- 77, 79-80, 82-87, 89-90, 92-97, and 99-100 of this application have been copied from U.S. Patent No. 5627524 for the purpose of an interference. These claims are not patentable to the applicant because they have been rejected under 35 USC 112 first and/or second paragraph. An interference cannot be initiated since a prerequisite for interference under 37 CFR 1.606 is that the claim be patentable to the applicant subject to a judgement in the interference.

Applicant's arguments regarding the 35 USC 112 first paragraph rejection of claims 72-77, 79-80, 82-87, 89-90, 92-97 are acknowledged, but not persuasive to overcome the under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The argument that claims 72, 82, and 92 have been rejected under section 112 based on the contention that each receiver store a checksum is not persuasive because this rejection applies to dependent claims 73, 83 and 93 which include a stream

"consisting of" 16 data bits framed by a pair of start bits and stop bit which is not supported because applicant includes only a single start bit in fig. 4, 20 data bits instead of 16, and a 6 bit checksum which corresponds to parity for validity checking rather than a single stop bit for framing. Note that these claims use the closed "consisting of" rather than the open "comprising" language.

Regarding independent claim 72, 82 and 92, the argument that applicant's microprocessor 158 in the receive stores the identification code in table for the receiver in static RAM or microcontroller 222 is not persuasive to overcome the rejection that applicant's disclosure does not support the individual stationary receiver units each comprising in combination infrared receiving means and programmable processor means remotely separate from said central processing means such that each said receiver unit has the capability to store multiple unique identity data streams received from multiple said transmitter units are not supported by applicant's specification. Applicant's store is in microcontroller 222 of the arbiter rather than the microcontroller 158 of the receiver. Therefore, applicant lacks individual receiver units each having infrared receiving means and processor means for storage. The argument that the claim does not require the same site for the memory and the detection is incorrect because the claim clearly requires the infrared receiver and the microprocessor means at the receiver unit and would not include the separate arbitration unit.

The argument that applicant does not fully understand what is meant in the Official action by "only one code is described" is not sufficient to overcome the rejection where it is clearly stated that each said receiver unit has the capability to store multiple

unique identity data streams received from multiple said transmitter units. How can applicant's specification support each receiver storing multiple identity data streams when storing only one identity data for only one receiver is described in applicant's disclosure at col. 12 lines 36-50.

The argument that the bit stream data does not materially differ from applicant's disclosure is not persuasive because applicant has not pointed out support for storing multiple streams form multiple transmitters for each receiver and does also lacks the particular stream of claims 73, 83, and 93. Further, applicant's microcontroller 222 is disclosed as storing a received unique identity which is removed when the code stops reporting for more than 10 seconds. Storing only one code is described by applicant, not the claimed multiple unique identity data streams received from multiple said transmitter units. Applicant's microcontroller 222 stores nurse level information with a list of ID codes, but this is sent from the central computer 2, not the receiver unit. Therefore applicant lacks storage of multiple unique codes from multiple transmitters. Further, the claim are written in means plus function language including receiver units each comprising infrared receiver means and programmable processor means which is interpreted under 35 USC 112 paragraph 6 as the infrared receiver and processor as disclosed in Fredrickson and cannot be supported by applicant's disclosure requiring elements that are not even part of the receiver unit. It is noted that applicant's preamp board 106 with photodiode 118 is mounted in a single gang face place with the logic board 108 including microcontroller 158. This is considered a receiver unit with a microprocessor but does not include the limitations of applicant's microprocessor 222 of

arbitrator 6 which is not part of the receiver unit. Independent claim 82 requires individual receiver units each comprising a single receiving means and single microprocessor means such that the total number of said microprocessor means is equal to the total number of individual receiver units each receiver unit has the capability to store multiple unique identity streams is not supported by applicant's specification. Applicant's specification requires first microprocessor 158 at the receiver and a second microprocessor 222 in the arbiter which is not in the receiver unit and does not result in the same number of receiver units and microprocessors. Applicant's specification does not particularly point out a single arbiter for each receiver, and if such was provided, specification would only support storage of a single unique code in the table for the single receiver which is removed when reception stops. Claim 92 includes a paired single infrared receiving means and single microprocessor means which is not supported for the same reason applied to claim 82.

Regarding dependent claims 75,85 and 95 the argument that applicant includes receivers in the ceiling and walls does not clearly support transmit units transmit both vertically and horizontally, nor is this supported by LED's 84A and 84B because it is not stated that these transmit vertically and horizontally. Applicant's disclosure does not specify the orientation of the transmitters, and the location of the receives does not define or limit the transmitter direction.

Regarding dependent claims 77, 87 and 97, the argument that the stored data is fed back to the receiver is not persuasive. Where is this disclosed? Where does

applicant's specification describe the receiver unit microprocessor (158, not 222) storing the multiple identity data streams of the independent claims?

Regarding dependent claims 79, 89, 99 the argument that the claims language is chosen differently from applicant's disclosure, but it is believed that the disclosure meets the language of the claims is not persuasive because this is merely a conclusion without specifying how or why the disclosure meets the language of the claims. Note that the claims require "each" transmitter unit repeatedly transmits a pattern "consisting of" three transmission with different time intervals between each of the three. This is not supported by applicants fig. 3 which does is not limited to "three" transmissions by "each" transmitter as required by the closed "consisting of" language in the claims.

The response to the prior arguments regarding claims 49-71 are repeated below. Since the copied claims are not supported and there are no allowable claims, an interference will not be declared.

Applicant's argument that the Mufti patent is non-analogous art is not persuasive. Applicant's invention is directed to a locating and monitoring system for a person, animal or equipment and since Mufti is directed to a personal locating and asset tracking system it is clearly analogous art. Applicant points out that Mufti differs from applicant's invention and then incorrectly concludes that this makes the reference non-analogous. Because of these differences, Mufti does not anticipate applicant's claims, but the difference do not make the reference non-analogous and the combination of reference shows that these difference would have been obvious to one of ordinary skill in the art at the time the invention was made. The examiner asserts that the other

applied references are analogous and/or within the same field of endeavor because Guest and Warren are directed to locator systems and Haner and the Radio Shack book are directed to data communications which are considered to be within the field of knowledge of the artisan in the wireless locator art. Further, Haner is directed to variation of response time to prevent interference or synchronization between a plurality of transmitters which is reasonably pertinent to the problem being solved by applicant. Therefore the applied references comply with the determination analogous art set forth in In re Wood, 202 USPQ 171, 174.

The argument that unlike Mufti, "applicant's claims 49 and 65 call for the occurrence of each pulse burst in time relative to the start of each time interval varying under the control of the means responsive to the algorithm and using the unique binary identification code of that transmitter to prevent synchronization with other transmitters" is not persuasive. Claim 49 includes language substantially similar to the above, but claim 65 does not and therefore applicant's argument is not commensurate with the scope of the claims. Also, applicant is reminded this rejection is based on a combination of references and not on Mufti alone. Varying of the interval is provided by the "random" interval discussed below which when provided by a software (algorithm) driven microcontroller as in Mufti is considered to be provided by a means responsive to an algorithm which also provides a binary ID code (92 in fig. 9) which prevents synchronization or interference.

Applicant's argument with reference to Mufti asserts that the applicants disclosure does not include "random" intervals for burst transmission but is controlled by

an algorithm which is the opposite. This is not persuasive. Mufti discloses transmitting at random intervals in col. 8 line 1 and since all the transmitter functions in Mufti are provided by the microcontroller (61) which operates on algorithms, then the random interval is a variation of the response interval making the microcontroller equivalent to applicant's means responsive to an algorithm to control varying of the interval. To separation from other transmitters, each transmitter microcontroller would require unique information for the random transmission which would be in binary form and therefore present a unique binary code. Further, the random pulse generator of Haner provides random pulses in a predetermined manner (recur periodically within predetermined time limits in col. 6, lines 29-41) which is equivalent to applicant's means responsive to an algorithm for transmitting bursts at varying intervals for the same purpose of preventing interference or synchronization of a plurality of transmitters. Haner discloses that many techniques for producing random pulses are available. One known technique is to use a pseudo random number generating algorithm responsive to an input code such as a seed. Regarding the means responsive to the algorithm being responsive to an address in memory, such is shown to be obvious by Warren as applied in the rejection of claim 51.

In response to Applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgement on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does

not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. In re McLaughlin, 443 F.2d 1392; 170 USPQ 209 (CCPA 1971).

Regarding the argument that it is improper to select features, to select features from the prior art to effect results expected from these features is within the purview of 35 U.S.C. § 103. See In re Skoner, 186 USPQ 80 (CCPA 1975).

In response to Applicant's argument that there is no suggestion to combine the references, the Examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971). References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA) 1969. In this case, Haner discloses varying the response times of different transmitters to solve the problem of interference or synchronization which is the same problem solved by applicant. Where it is not practical to synchronize the multiplexing of the transmitters to particular time slots for each transmitter as in Guest or where there are too many transmitters to provide separate time slots for each, the technique of Haner minimizes the probability that signals will collide.

Applicant's assertions that the references are non-analogous, that hindsight is used and that the references themselves must provide some teaching of the combination are not persuasive for the reasons stated above.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

EH
05/20/01

EDWIN C. HOLLOWAY, III
PRIMARY EXAMINER
ART UNIT 2635

CLIFFORD A. POFF
PO BOX 1185
PITTSBURGH, PA 15230-1185

MICHAEL HORABIK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

conferee